Atmospheric Radiation Study

Atmospheric and Environmental Research, Inc. (AER), Cambridge, Massachusetts is a privately-owned research company that provides a variety of atmospheric science services to government and industrial customers. The company's remote sensing group has developed a model that simulates the sensitivity of satellite-measured solar radiation to changes in relative humidity and wind speed near the ocean surface. The model is used to support meteorological analyses and to evaluate the use of satellites for determining the extent to which marine aerosols—tiny solid particles or liquid droplets—in the atmosphere reduce the range of optical instruments; it also provides real-time predictions on the possibly reduced capability of optical communications equipment in the ocean near-surface environment. The model was developed under contract to the Office of Naval Research; for the study, AER used satellite data supplied by the Defense Meteorological Satellite Program spacecraft pictured.

During the project, AER used a software package originally developed by Goddard Space Flight Center for analyzing data from NASA environmental satellites. Called RADTMO (Radiative Transfer Models), the package is a set of programs that compute scattered atmospheric radiation caused by aerosols. RADTMO was supplied to AER by the Computer Software Management and Information Center (COSMIC)®, a NASA dissemination center that routinely makes available to customers government developed computer programs that have potential for secondary application.

®COSMIC is a registered trademark of the National Aeronautics and Space Administration.